

# Unit Planning Guide: Grade 7\_\_\_ Unit 4\_\_\_ of \_\_\_7

Unit Title:Ratios and proportional relationships	Pacing (Duration of Unit):
Grade:7	Buffer Day(s):

## Desired Results

### Transfer Goals

*Students will be able to independently use their learning to:*

- **Make sense of problems and persevere in solving them.**
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- **Model with mathematics.**
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- **Look for and express regularity in repeated reasoning.**

Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

Meaning (\*Mostly assessed through Performance Tasks/Assessments)

<p><b>Big Ideas:</b> (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)</p> <ul style="list-style-type: none"> <li>• Recognize a proportional relationship between two quantities in different representations like table, graph equation diagram and verbal description</li> <li>• Model a proportional relationship between two quantities with different representations like table, graph equation diagram and verbal description</li> <li>• Identify the constant of proportionality ( unit rate) in all representations</li> <li>• Application of proportional relationships in multistep ratio and percent problems</li> </ul>	<p><b>Essential Questions:</b> (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)</p> <ul style="list-style-type: none"> <li>• How is the constant of proportionality helpful in extending and analyzing real world situations?</li> <li>• When do we use ratios and proportions in our daily life?</li> </ul>
<p><b>Standards (Priority Standards in bold):</b></p> <p>7.RP.1: Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.</p> <p><b>7.RP.2: Recognize and represent proportional relationships between quantities.</b></p> <p>7.RP.2a: Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table, or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</p> <p>7.RP.2b: Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>7.RP.2c: Represent proportional relationships by equations.</p> <p><b>7.RP.3: Use proportional relationships to solve multi-step ratio and percent problems.</b></p> <p><b>7.G.1: Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</b></p>	<p><b>WiDA Standards (ELL)</b></p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul> <p>To be completed in collaboration with the ELL Department</p>
<p><b>Acquisition (*Mostly assessed through traditional summative assessments)</b></p>	

<p><b>Knowledge:</b> Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.</p> <p><i>Students will know ...</i></p> <ul style="list-style-type: none"> <li>• Ratios and proportions</li> <li>• Representations of proportional relationships</li> <li>• Constant of proportionality</li> <li>• Scale factor</li> </ul> <p><b>Key Academic Vocabulary:</b>  <b>Ratio and proportion</b>  <b>Rate and unit rate</b>  <b>Constant of proportionality</b>  <b>Scale factor</b></p>	<p><b>Skills:</b> The discrete skills and process students should be able to use independently (<u>Bloom's Level of Learning should be noted in parentheses.</u>)</p> <p><i>Students will be skilled at:</i></p> <ul style="list-style-type: none"> <li>• Finding the missing value in a proportion</li> <li>• Writing a ratio as part-to-part and part-to-whole</li> <li>• Computing unit rates as constant of proportionality</li> <li>• Determining if two quantities are proportional</li> <li>• Represent proportional relationships between two quantities in tables, graphs diagrams and verbal descriptions</li> <li>• Applying proportional reasoning to solve problems involving scale drawings</li> <li>• Rewriting and solving proportions as equations using the cross products</li> </ul>
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